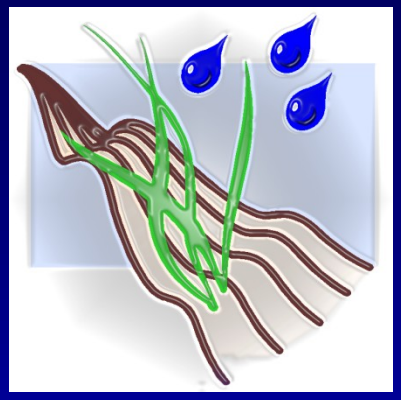
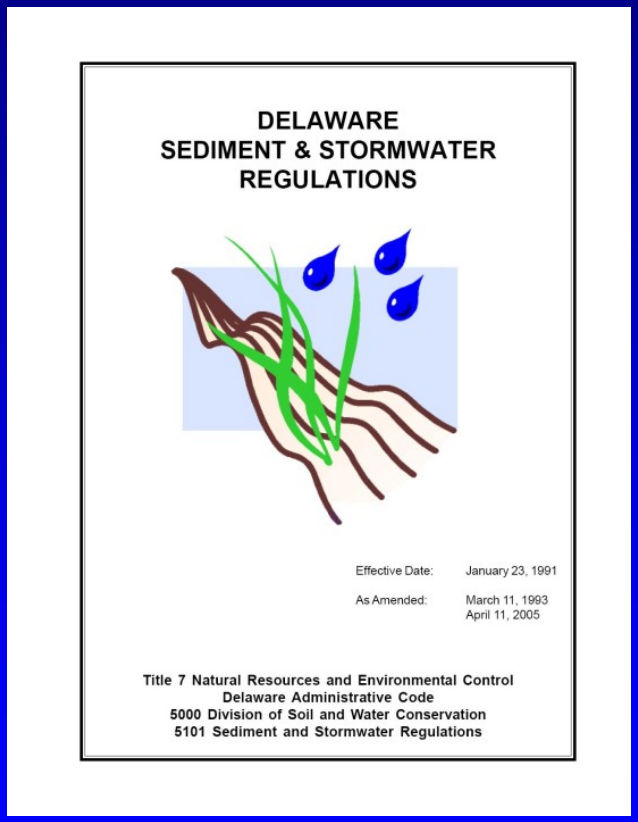


Revisions to the Delaware Sediment & Stormwater Regulations: Overview of Proposed Changes

Regulatory Advisory Committee Meeting
February 9, 2009

Why?

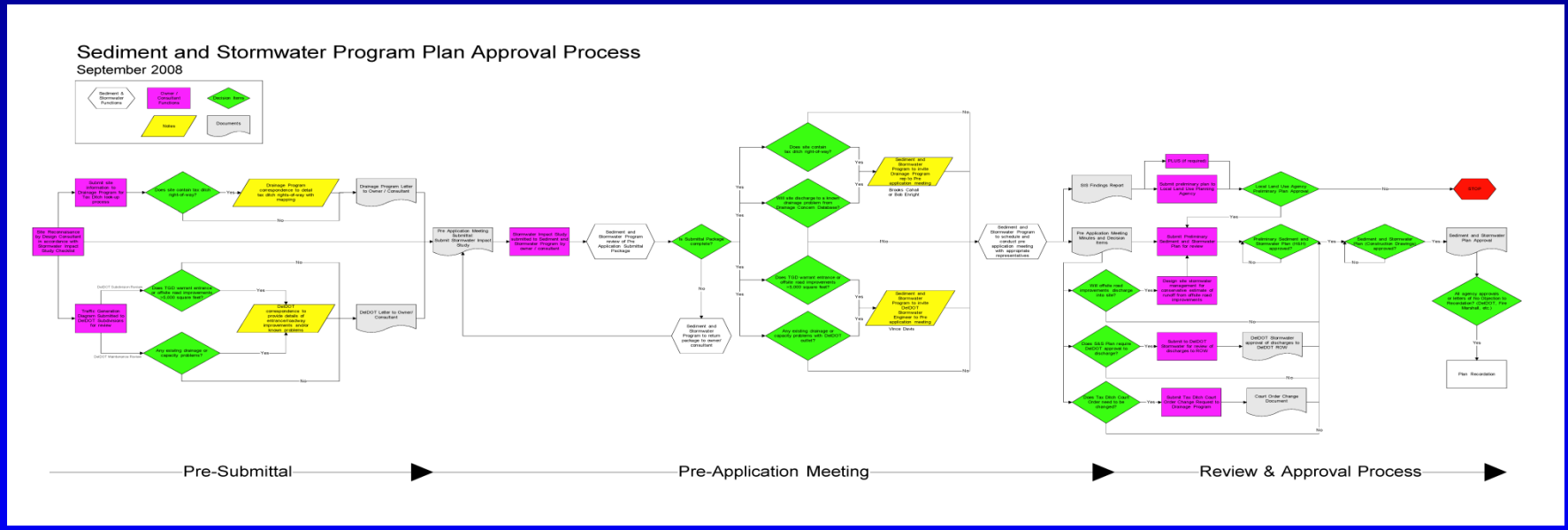


- Current regulations are not achieving the goals that were hoped
- “One size fits all” SWM doesn’t work at the watershed level
- Current plan review process seen as inefficient

What?
Guiding Principals

- Peak-based to Volume-based management
- Site-level to Watershed-level management
- Streamline plan review/approval process!

Value Stream Mapping (VSM)



How???

Plan Review & Approval Process

- Current Regs
  - 3 Step Process as defined through policy
    - Pre-Application Meeting
    - Sediment & Stormwater Conceptual Plan
    - Sediment & Stormwater Construction Plan
- Proposed Regs
  - 3 Step Process as defined in Regulations
    - Step 1: Pre-Application Meeting
    - Step 2: Preliminary Sediment & Stormwater Plan
    - Step 3: Sediment & Stormwater Plan

Step 1 – Pre-Application Meeting

- Stormwater Impact Study (SIS) - Applicant submits site data including soils, hydrology, historic drainage problems, etc.
- Applicant & review agency go through pre-defined checklist to develop the SIS Findings Report

SIS Findings Report

DRAFT

Impact Item	*Impact Rating*		
	Minor	*Moderate*	*Significant*
1. Soils - On-site soils have low permeability, high water table, or other limitations that could adversely affect adequate stormwater management for the proposed project	<15% of developed portion of the site has soils with limitations to development (i.e. high water table erosivity, excavations)	15% - 50% of developed portion of the site has soils with limitations to development (i.e. high water table, erosivity, excavations)	>50% of developed portion of the site has soils with limitations to development (i.e. high water table, erosivity, excavations)
2. Runoff Potential - Change in land cover due to removal of trees, increases in impervious cover, etc. could adversely affect adequate stormwater management for the proposed project.	Post-developed RCN ≤ 70	Post-developed RCN between 70 and 80	Post-developed RCN ≥ 80
3. Water Quality - Pollutant loadings associated with proposed project could adversely affect adequate stormwater management	Targeted pollutants capable of treatment with standard BMPs	Targeted pollutants will require treatment train approach to achieve reduction goals	Targeted pollutants will require a Best Available Technology solution to achieve reduction goals
4. Sump Conditions - Existing topography of site creates sump areas where runoff tends to collect without direct discharge.	<15% of site area drains to sump areas	15% - 50% of site area drains to sump areas	>50% of site area drains to sump areas
5. Discharge Points - Areas where stormwater runoff leaves the site have limitations due to existing grade, backwater effects, lack of a defined channel or other physical site limitations.	Zero (0) site discharge points with apparent problems **OR** <10% of site area drains to a discharge point with an apparent problem	At least one (1) site discharge point with an apparent problem **OR** 10% - 50% of site area drains to a discharge point with an apparent problem	Multiple (more than 1) discharge point with an apparent problem **OR** >50% of site area drains to a discharge point with an apparent problem **OR** Lack of easements and/or alteration of drainage patterns could raise potential "right-to-discharge" issues
6. Off-Site Drainage - Areas draining into the site could adversely affect adequate stormwater management for the proposed project	<25% offsite area relative to site area draining onto site	25% - 50% offsite area relative to site area draining onto site	>50% offsite area relative to site area draining onto site
7. Conveyance - Downstream conditions such as inadequate pipe or channel capacity could limit adequate drainage from the site	Zero (0) known historic drainage problems **OR** Zero (0) in-line structures prior to the 10% analysis point	At least one (1) known historic drainage problem **OR** At least one (1) in-line structure prior to the 10% analysis point	Multiple (more than 1) known historic drainage problems **OR** Multiple (more than 1) in-line structures prior to the 10% analysis point **OR** Stream channel capacity degraded due to vegetation, steepness, erosion

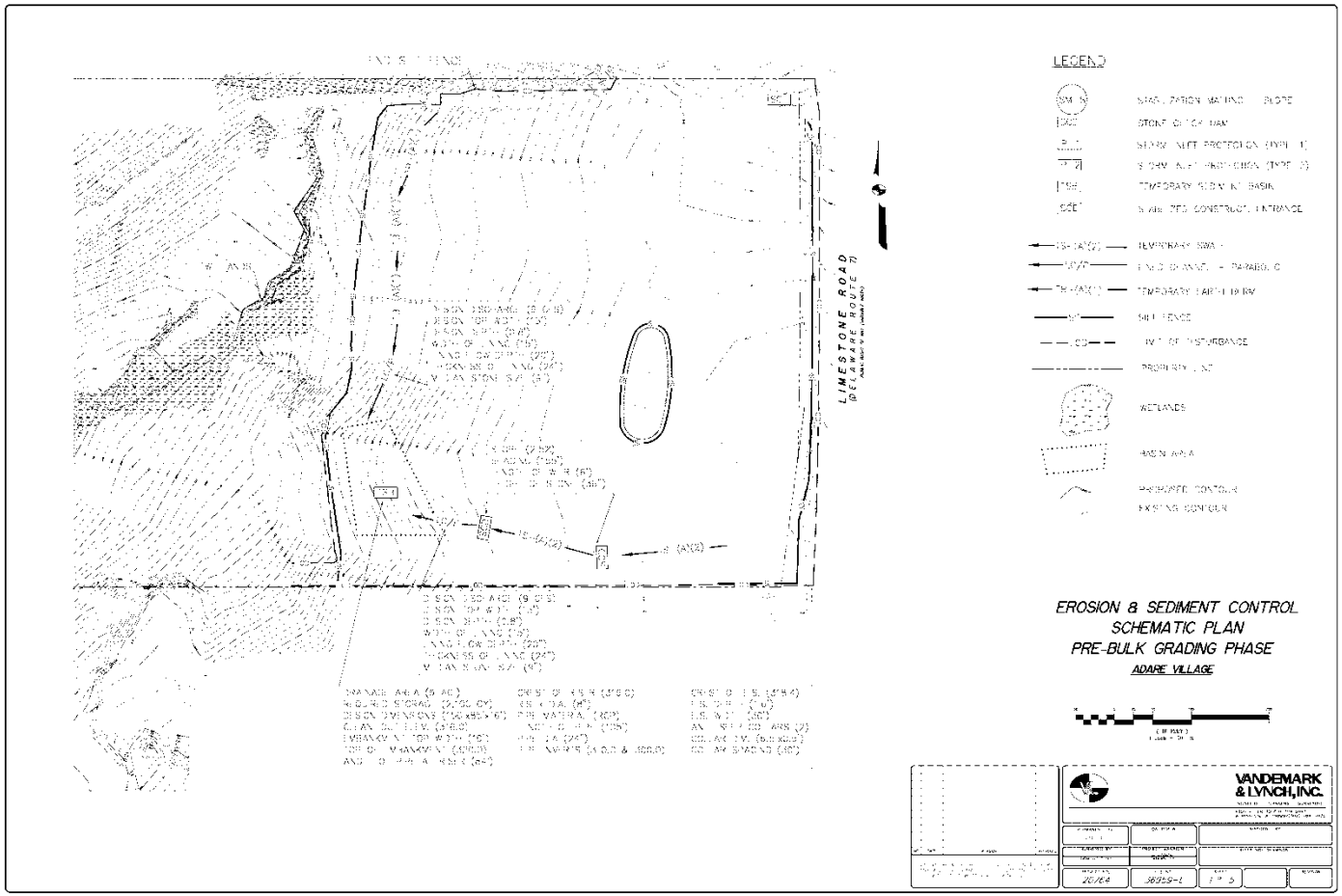
Step 1 – Pre-Application Meeting

- Stormwater Impact Study (SIS) - Applicant submits site data including soils, hydrology, historic drainage problems, etc.
- Applicant & review agency go through pre-defined checklist to develop the SIS Findings Report
- SIS Findings Report forwarded to local planning authority to aid in the decision-making process

Step 2 – Preliminary S&S Plan

- Hydrologic & Hydraulic (H&H) analysis
- Schematic ESC Plan

Schematic ESC Plan



Step 3 – S&S Plan

- Construction drawings
- Standardize on a “Common Look & Feel” for plan preparation

Questions?

Erosion & Sediment Control

- Current Regs
  - Max. 20 ac. disturbance
  - "Best Available Technology" (BAT) adopted by reference to NPDES CGP
- Proposed Regs
  - Disturbance > 20 ac. requires engineered design based on 1-YR bare earth condition
  - BAT included in regulatory language

Stormwater Management

- Current Regs
  - 4 Regulatory Storm Events
    - WQ (2” rainfall)
    - 2-YR
    - 10-YR
    - 100-YR
- Proposed Regs
  - 3 Regulatory Storm Events
    - 1-YR (Resource Protection Event)
    - 10-YR (Conveyance Event)
    - 100-YR (Flooding Event)

Stormwater Quality Management

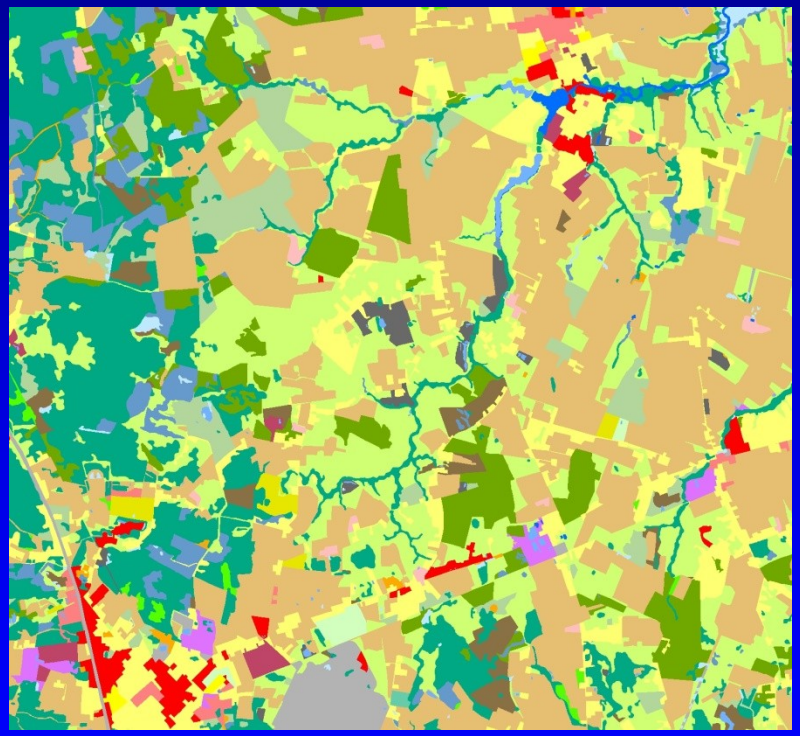
- Current Regs
  - 2” Rainfall event (~6 month freq.)
  - Preferential hierarchy based on Green Technology BMPs and extended detention
- Proposed Regs
  - 1-YR Storm event (~2.7” rainfall)
  - Optimize for runoff reduction

Stormwater Quantity Management

- Current Regs
  - 2-YR, 10-YR, 100-YR (above C&D Canal)
  - Analyze pre-dev. and post-dev. conditions
  - Match post-dev. peak discharge to pre-dev. peak discharge
  - Same management strategy for all sites
- Proposed Regs
  - 10-YR, 100-YR (State-wide)
  - Analyze post-developed condition only
  - Optimize for “no adverse impact”
  - Strategy options available depending on SIS results & location within watershed

Options for Quantity Management

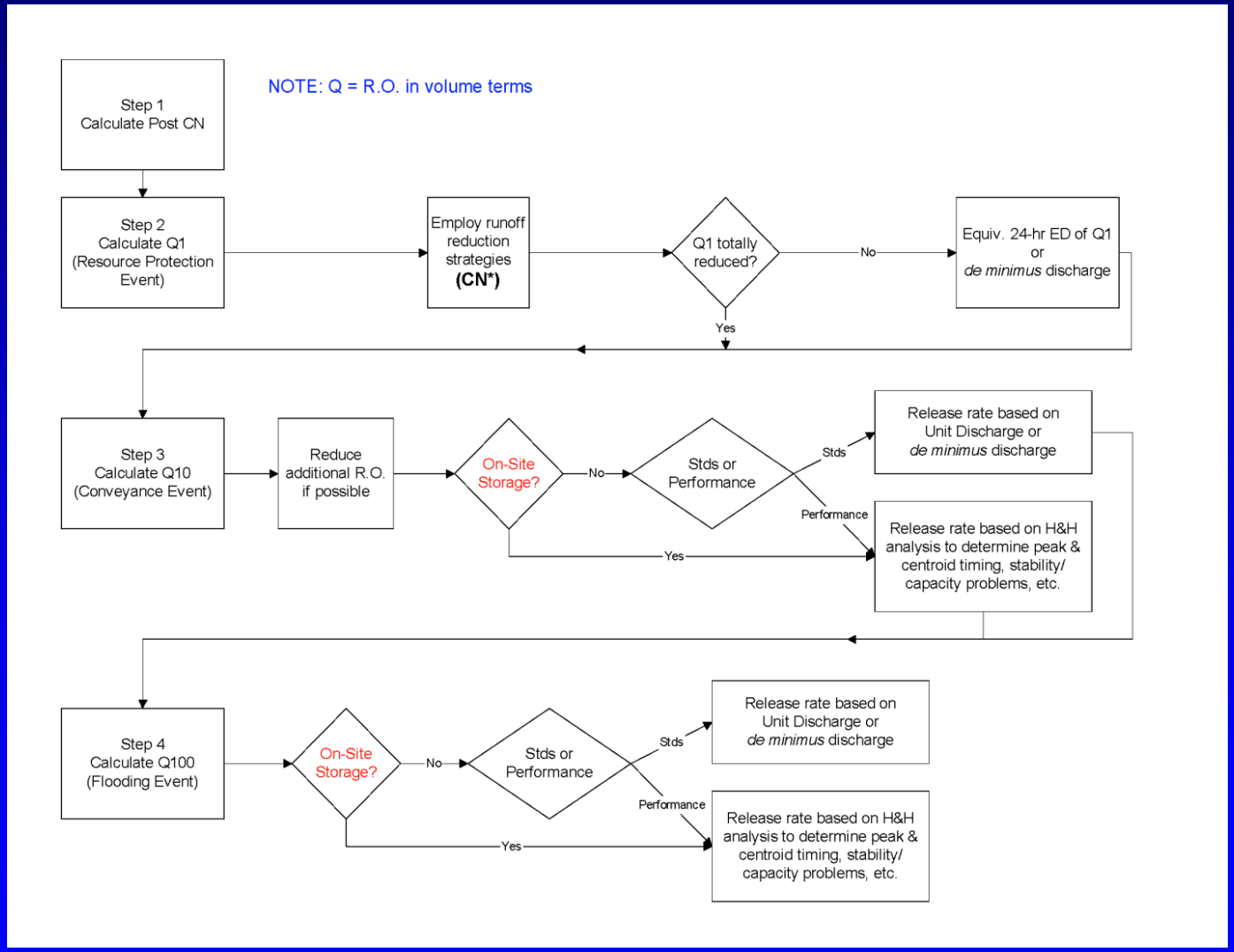
- Option 1
  - Standards-based
    - Unit Discharge
      - Based on 2007 LULC
      - Woodland/Meadow
        - » 10-YR: 0.375 cfs/ac
        - » 100-YR: 0.75 cfs/ac
      - Non-Woodland/Non-Meadow
        - » 10-YR: 0.75 cfs/ac
        - » 100-YR: 1.50 cfs/ac



Options for Quantity Management

- Option 1
  - Standards-based
    - Unit Discharge
- Option 2
  - Performance-based
  - Criteria based on:
    - hydrograph timing
    - channel stability
    - system capacity
  - H&H analysis required
    - 3 levels of increasing detail
    - Release vs. Detain?

Proposed SWM Flowchart



Questions?

Redevelopment/Brownfields/Infill

- Current Regs
  - No distinction
  - Anything less than full compliance requires variance
- Proposed Regs
  - Separate subsection in Regulations
  - Present proposal to develop “points” system based on a suite of strategies to achieve compliance

Waivers

- Current Regs
  - Specified in Regulations
- Proposed Regs
  - Replaced with alternative means for compliance through the criteria for each regulatory storm event

Alternative Compliance Example

- Current Regs
  - Section 3.0 Exemptions, Waivers & Variances
    - 3.2.2 A project may be eligible for a waiver or variance of stormwater management for water quantity control if the applicant can demonstrate that:
      - 3.2.2.1…….
      - 3.2.2.2 Provisions will be made or exist for a nonerosive conveyance system to tidewater by either a closed drainage system or by open channel flow that has adequate capacity to contain the runoff events being considered as a requirement of these regulations;

Alternative Compliance Example

- Proposed Regs
  - Section 5.3 Conveyance Event
    - 5.3.3 Compliance with this section may be accomplished through the following:
      - 5.3.3.1 ……
      - 5.3.3.2 ……
      - 5.3.3.3 Provisions will be made or exist for a nonerosive conveyance system to tidewater by either a closed drainage system or by open channel flow that has adequate capacity to convey the Cv;

Variances

- Current Regs
  - Element within Regulations
  - Process generally defined through policy
  - Approved by Delegated Agency
- Proposed Regs
  - Element within Regulations
  - Limited to true “hardship” situations
  - Formal process, including appeals procedure
  - Currently proposed at Department level

TMDLs

- Current Regs
  - Adopted by reference to Chap. 60
  - Load based on 2.0” rainfall event
- Proposed Regs
  - Adopted by reference to Chap. 60
  - ?Load based on 1-YR storm?

Watershed Plans

- Current Regs
  - Designated Watersheds
  - External process endorsed by Department
  - Local implementation
- Proposed Regs
  - Watershed Master Plans
  - Internal process initiated by Department
  - Integrated into State program

Stormwater Utility

- Enabled by Chap. 40
- No changes proposed

Questions?

Fees

Section 1

- Current Regs
  - Charge fees to support program
  - Financial Guarantee option
- Proposed Regs
  - Charge fees to support program
  - Financial Guarantee option more defined
  - Fee-in-Lieu option
    - Variance Requests
    - Watershed Master Plan areas

Definitions

Section 2

- Proposed regs definitions:
  - "Adequate Conveyance"
  - "BAT" and "BMP"
  - "Infill", "Brownfield", and "Redevelopment"
  - "Maintenance"
  - "Resource Protection", "Conveyance", and "Flooding" Events
  - "Runoff Reduction Practices"

Definitions

Section 2

- Current Regulations
  - "Detention Structure"
- Proposed Regulations
  - "Stormwater Management System"

Definition of Stabilization

Section 2

- Current Regs
  - "Stabilization"
- Proposed Regs
  - "Temporary Stabilization" – E&S Handbook
  - "Permanent Stabilization" – E&S Handbook
  - "Final Stabilization" – NPDES definition

Standard Plan Criteria

Section 3

- Current Regs
  - Residential, ag structure, minor commercial
    - < 1acre of disturbance
- Proposed Regs
  - ALL Standard Plans
    - < 1.0 acre of disturbance

Standard Plan Criteria

Section 3

- Proposed New Categories
  - Maintenance of SWM areas
  - Non-residential structures
    - <20% impervious cover, and
    - Using runoff reduction practices
  - Reconstruction

Easements

Section 3

- Current Regs
  - No easement requirement
- Proposed Regs
  - Easements to be required on stormwater system (conveyance and facility)
  - Established on the Record Plan

Construction Inspection

Section 6

- Current Regs
  - Full responsibility of Dept or Del. Agency responsibility
  - CCR inspections
- Proposed Regs
  - Owner responsible for weekly inspections
  - Regular inspections by Dept or Del Agency
  - CCR inspections

CCR
Section 6

- Current Regs
  - Required on sites 50 acres or greater
  - Weekly reporting
  - Function under direction of a PE
  - Suspend / revoke certification
- Proposed Regs
  - Required on sites 20 acres or greater
  - Weekly reporting; less frequent on inactive sites
  - PE responsibility strengthened in regs
  - Probation prior to suspension/revocation

Required Notification & Inspections

Section 6

- Current Regs
  - Before construction
  - Upon project completion
- Proposed Regs
  - 5 days prior to construction
  - Pre-construction meeting
  - Perimeter Control Inspection
  - Permanent SWM Construction
  - Project Completion

Maintenance Inspections

Section 7

- Current Regs
  - Delegated Agency inspections annually
  - Access to facility for inspection
- Proposed Regs
  - Delegated agency inspections bi-annually (unless NPDES requires more)
  - Access to facility for inspection

Maintenance Responsibility

Section 7

- Current Regs
  - Owner to perform preventative maintenance to ensure “proper functioning”
- Proposed Regs
  - Owner to maintain BMP and perform routine and non-routine maintenance to ensure proper functioning
  - Transfer of ownership for maintenance responsibilities

Maintenance Responsibility

Section 7

- Proposed Regs
  - O&M Plan
    - When to submit?
      - Prior to approval
      - At project close-out with as-builts
  - Enforcement as specified in Section 8

Enforcement

Section 8

- Current Regs
  - 7 Del. C. Chapter 40
- Proposed Regs
  - 7 Del. C. Chapter 40
  - 7 Del. C. Chapter 60
    - Compliance with NPDES requirements

Delegation
Section 9

- Current Regs
  - Delegation of four elements
    - Plan Approval
    - Construction Inspection
    - Maintenance Inspection
    - Education and Training
- Proposed Regs
  - Delegation of “program elements”

Questions?

Discussion